

Remarks

Claims 32-84 are currently pending. Claim 1 is amended herein to recite “(c) adding one or more target substrates to the mixed culture in the bioreactor during the course of the culture.” Support for the amendment to Claim 1 can be found throughout the specification and at least on page 8, lines 4-6 and page 11, lines 25-33. Claims 55, 61, 65, and 69 have been amended to correct spelling or grammatical errors. Claims 50-54 and 71-73 have been amended to correct an error in dependency. Applicants believe that these amendments do not constitute new matter or raise new issues. Accordingly, Applicants respectfully request that the amendments be entered and receive full consideration.

Claim Objections

Claims 55, 61, 65, and 69 are objected to for allegedly containing grammatical or spelling errors. Applicants have amended Claims 55, 61, 65, and 69 to correct the alleged informalities. Applicants believe these objections to be moot in light of the amendments to Claims 55, 61, 65, and 69 and respectfully request the withdrawal of the objections.

35 U.S.C. 112

Claims 50-54 and 73 are rejected under 35 U.S.C. 112, second paragraph as allegedly being indefinite. In particular, the Examiner alleges that the recitation “wherein the continuously produced enzyme/substrate/fungus mixtures” in Claims 50-54 and the recitation “said preinduced mixtures...” in Claim 73 lack antecedent basis. Applicants respectfully traverse this rejection.

Regarding claims 50-54, the Examiner alleges that the phrase “continuously produced enzyme/substrate/fungus mixtures” is without antecedent basis. Claims 50-54 have been amended herein to depend from claim 42 rather than claim 32. Applicants respectfully point out that, as amended, the claims are drawn to a method of producing an enzyme by contacting microorganisms with target substrates. Thus, the bioreactor culture is necessarily a mixture of the microorganism, the substrate, and the product of the microorganism and its contact with the substrate i.e., the enzyme. As claim 42 (from which Claims 50-54 now depend) stipulates that at least one microorganism is a fungi, all the elements in the recited phrase are present in the preceding claim. In other words, antecedent basis is present as currently amended. Applicants believe this rejection to be overcome and respectfully request its withdrawal.

Regarding Claim 73, the Examiner alleges that the phrase “said preinduced mixtures...” lacks antecedent basis. Claims 71-73 have been amended herein to correct their dependency to Claim 35 rather than Claim 32. Applicants respectfully point out that Claim 35, recites that the substrate used to preculture the microorganisms before inoculation is inductive. Therefore, the mixture is preinduced. Applicants believe this rejection to be overcome in light of the amendments made herein and respectfully request that the rejection be withdrawn.

35 U.S.C. 102

Claims 32-38, 41-45, 54-56, and 83 are rejected under 35 U.S.C. 102(b) as allegedly being anticipated by Gutierrez-Correa et al. (1999) *Bioresource Technology* 68: 173-178 as evidenced by NCBI Taxonomoy search results for *A. Niger* and Durand, A. (2003) *Biochemical Engineering Journal* 13: 113-125. Applicants respectfully traverse this rejection.

Applicants respectfully point out that a “claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” (M.P.E.P § 2131 quoting *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987)). Claim 32 has been amended to recite a semisterile culture method for producing a defined enzyme mixture, metabolite mixture, or combination thereof comprising amongst other things, “(c) adding one or more target substrates to the mixed culture in the bioreactor during the course of the culture.” Applicants respectfully point out that Gutierrez-Correa et al. do not describe let alone teach any culture method of culture where target substrates are added to the mixed culture in a bioreactor during the culture process. Because Gutierrez-Correa fail to teach all the limitations of Claim 32, Claim 32 and any claim dependent thereon (i.e., Claims 33-38, 41-45, 554-56, and 83) are not anticipated by the cited art. Applicants believe this rejection to be overcome and respectfully request its withdrawal.

35 U.S.C. 103

Claims 32-45, 50-58, 71-80, 83, and 84 are rejected under 35 U.S.C. 103 as allegedly being obvious over Gutierrez-Correa et al. and NCBI Taxonomoy search results for *A. Niger* and Durand, A. in view of Tenerdy et al. (2003) *Biochemical Engineering Journal* 13: 169-179 and further in view of WO 02/10099 and Raimbult, M. (1998) *Electronic Journal of Biotechnology* 1: 174-188. Applicants respectfully traverse this rejection.

In the recent KSR Int'l Co. v Teleflex, Inc. ruling, the Supreme Court has reaffirmed the *Graham* factors for determination of obvious under 35 U.S.C. 103(a). *KSR Int'l Co. v. Teleflex, Inc. (KSR)*, No 04-1350 (U.S. Apr. 30, 2007). The three factual inquiries under *Graham* require examination of: (1) the scope and content of the prior art; (2) the differences between the prior art and the claims at issue; (3) the level of ordinary skill in the pertinent art. *Graham v. John Deere (Graham)*, 383 U.S. 1, 17-18, 149 USPQ 459, 467 (1966). Additionally, the court in *Graham* noted a fourth consideration for the determination of obviousness would be any objective evidence of secondary considerations such as unexpected results, unmet need in the art, and commercial success.

Furthermore, in order to establish a *prima facie* case of obviousness, the examiner has the initial burden of supporting the conclusion of non-obviousness. In particular, the Examiner has the initial burden of ascertaining the differences between the claims and the prior art which requires interpreting both the art and the claims as a whole. Put another way, “all words in a claim must be considered in judging the patentability of that claim against the prior art.” *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). Applicants respectfully point out that as presently amended, this burden has not been met. In particular, the Examiner has not shown it would be obvious to “add one or more target substrates to the mixed culture in the bioreactor during the course of the culture.”

Claim 32 has been amended to recite a semisterile culture method for producing a defined enzyme mixture, metabolite mixture, or combination thereof comprising amongst other things, “(c) adding one or more target substrates to the mixed culture in the bioreactor during the course of the culture.” Applicants respectfully point out that this feature is not taught or suggested by any of the cited references. Moreover, the combination of the cited references fails to teach or suggest this limitation. Therefore, as amended, the recited art alone or in combination fail to teach or suggest all the limitations of the claims, and thus, the combination of cited art fails to make the present claims obvious. Applicants believe this rejection to be overcome and respectfully request its withdrawal.

Claims 32-38, 41-48, 54-56, and 83 are rejected under 35 U.S.C. 103 as allegedly being obvious over Gutierrez-Correa et al. and NCBI Taxonomoy search results for *A. Niger* and Durand, A. in view of Bradley et al. (U.S. Patent No. 6,485,952) and in further view of Pandey et

al. (2000) *Process Biochemistry* 53: 1153-1169 and NCBI Taxonomy search for *Streptomyces clavuligerus*. Applicants respectfully traverse this rejection.

Applicants respectfully remind that the Examiner that, as noted above, in order for a combination of references to make a claim(s) obvious the cited art alone or in combination much teach or suggest all the limitations of the claims. Applicants respectfully point out that the Examiner has failed to accomplish this goal. In particular, the Examiner has not shown it would be obvious to “add one or more target substrates to the mixed culture in the bioreactor during the course of the culture.”

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Claims 32-38, 41-48, 54-56, 59-70, and 83 are rejected under 35 U.S.C. 103 as allegedly being obvious over Gutierrez-Correa et al. and NCBI Taxonomoy search results for *A. Niger* and Durand, A. in view of De Vries et al. (1997) *Applied and Environmental Microbiology* 63: 4638-4644; and of El-batal (2001) *Food Research Internatinonal* 34: 715-720; and of Viveros et al. (2000) *J. Agric. Food Chem.* 48: 4009-4013 and of Malherve et al. (2002) *Review in Environmental Science and Biotechnology* 1: 105-114; and of Mach et al. (1999) 65: 1858-1863; and of Tengerdy et al.; and of Chiou et al. (2002) *Asian-australasian journal of animal science* 15(3) abstract and in further view of Raimbuault. Applicants respectfully traverse this rejection.

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be obvious to “add one or more target substrates to the mixed culture in the bioreactor during the course of the culture.”

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Pursuant to the above amendments and remarks, reconsideration and allowance of the pending application is believed to be warranted. The Examiner is invited and encouraged to directly contact the undersigned if such contact may enhance the efficient prosecution of this application to issue.

**ATTORNEY DOCKET NO. 04156.0021U1
Application No. 10/562,248**

An EFS web payment in the amount of \$555.00, representing the fee for a small entity under 37 C.F.R. § 1.17(a)(3) for a three (3) Extension of Time, and a Request for a three (3) month Extension of Time are being submitted electronically. This amount is believed to be correct; however, the Commissioner is hereby authorized to charge any additional fees that may be required or credit any overpayment to Deposit Account No. 14-0629.

Respectfully submitted,

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I hereby certify that this correspondence, including any items indicated as attached or included, is being transmitted by EFS-WEB on the date indicated below.

/J. Gibson Lanier, Ph.D., 57,519/ _____ September 09, 2010 _____
J. Gibson Lanier, Ph.D. Date